DOCUMENT RESUME

ED 147 779 CS 003 821

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TITLE The Use and Effectiveness of Systematic Desensitization and Study Skills Methods in a Test Anxiety Reduction Program.
PUB DATE 77
NOTE 16p.; Paper presented at the Annual Meeting of the Western College Reading Association (10th, Denver, Colorado, March 31-April 2, 1977)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Anxiety; College Students; *Desensitization; Higher Education; *Study Skills; Testing Problems; *Test Wiseness
IDENTIFIERS *Test Anxiety

ABSTRACT

Two groups of college students participated in test-anxiety reduction programs at a Learning Resource Center. One group (six students) participated in systematic desensitization procedures and the other group (17 students) was exposed to study skills methods of reducing test anxiety. Students in both groups were pretested and posttested with the Suinn Test Anxiety Behavior Scale (STABS) and the IPAT Anxiety Scale Questionnaire, and they completed a personal data sheet and a postcourse evaluation form. Significant differences were found between groups for the STABS but not for the IPAT Anxiety Scale Questionnaire. Other measures indicated students generally favored the treatment which they had received and felt they had benefited. Overall, results were interpreted as indicating the superiority of systematic desensitization to other methods of test-anxiety reduction. (AA)

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To be published in the Proceedings to the Tenth Annual Conference of the Western College Reading Association, 1977.

THE USE AND EFFECTIVENESS OF SYSTEMATIC DESENSITIZATION AND STUDY SKILLS METHODS IN A TEST ANXIETY REDUCTION PROGRAM

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INTRODUCTION

For over a decade much research has been conducted in the area of test-taking anxiety. The research still continues in an effort to discover forms of intervention that would best alleviate this difficulty for college level students. One of the most common forms of intervention is systematic desensitization, originally developed by Joseph Wolpe (22). Many researchers have carried out studies comparing systematic desensitization to other test anxiety reduction methods such as group insight therapy (14), implosive therapies (5) and cognitive modification (16) to name but a few. Hall (11) discovered that certain variations such as a massed administration of systematic desensitization, as well as vicarious methods of desensitization, were as effective as the more traditional procedure, and more effective than a no treatment control group. The Suinn Test Anxiety Behavior Scale showed them to be significant at the .01 level in reducing anxiety.

For several years the Learning Resource Center and the Counseling Center at California State University, Northridge, have worked closely together in reducing the test-taking anxiety of students. In the Fall 1976 semester the two campus agencies jointly sponsored a test anxiety reduction program for two groups of students. One group was given systematic desensitization procedures, the other group was exposed to study skills methods of reducing test anxiety. Our belief was that the group utilizing systematic desensitization would be less test-

anxious after treatment than the group exposed to study skills methods.

DESIGN

The two groups were conducted over the same six week period of time. Each group met for approximately fifty minutes a day, two times a week, giving each group an equivalent amount of treatment time. Both groups met in the Learning Resource Center. Group A (n=6) was conducted by a clinical psychologist from the Counseling Center and a study skills counselor from the Learning Resource Center and was, by use of systematic desensitization, aided in the reduction of test-related anxiety. Group B (n=17) was led by a study skills counselor under the direct supervision of a clinical psychologist, and was exposed to study skills methods of reducing test anxiety.

A waiting list control group, originally agreed upon by group leaders for the sake of experimentation, was later decided against for ethical reasons. At a time in the semester when it was not possible to provide another group, it seemed unreasonable to first offer help to students and then deny it for control group purposes.

INSTRUMENTATION

Students in both groups were pre-tested and post-tested with the same measures. The Suinn Test Anxiety Behavior Scale (STABS) was administered to measure the amount of test-related anxiety in

each student while the IPAT Anxiety Scale Questionnaire, derived from Form 16PF, was given as a general fear measure. Along with the pre-tests, students in both groups were also asked to complete a Personal Data Sheet so the group leaders could get a general idea of the nature of the group population and each person's history of test anxiety. Students in both groups were also post-tested with the STABS and IPAT. At the time of post-testing the students also completed an evaluation form. This questionnaire, taken largely from Wisocki (21), had a list of test-taking situations. The students were asked to rank their anxiety level in these situations as they remembered it to be before they started the group and as it was during the six weeks they participated in the group.

At the beginning of the following semester, after the students had been given a chance to guage their newly acquired methods for reducing anxiety, students from both groups were sent another questionnaire. This follow-up evaluation form was identical to the post-group questionnaire except that the emphasis was on the amount of anxiety they felt in test-taking situations before the group compared to the amount they felt after completion of the group.

Although semester-later GPAs were considered as a possible measure of external performance, a decision was made to defer examination of this type of outcome criteria. The basis for this decision was the belief that possible contamination of resulting GPAs by other external confounding factors could diminish the sensitivity of the measure.

PROCEDURE

Group A, which utilized systematic desensitization, collectively constructed a hierarchy of twenty-two items which they successfully completed during the six week period. The first two sessions were devoted entirely to discussion of the procedure, construction of the hierarchy, and listening and responding to a tape which directed the students into a less anxious state via deep muscle relaxation (13). This tape was duplicated for all group members, who were instructed to practice with it at home as well.

With the exception of the first two sessions, the students in Group A began each session by immediately going into a relaxed state. They were then asked to visualize the first item on the hierarchy, and were given ten seconds to perform the visualization. If any of the group members felt anxiety while visualizing the scene, they were asked to signal the group leaders by raising their right hand. If any student signaled, the entire group was told to terminate the visualization and to return to relaxation for ten seconds. After the group was given time to relax, they were asked to visualize the same scene again. If any group member felt anxiety during the repeated visualization, he or she terminated all visualization for the remainder of the session while the others continued working up the hierarchy. Although this modification in procedure may not be a standard method in group systematic desensitization, it was helpful in allowing as many students as possible to work up the hierarchy in the six week

period. At the conclusion of the six weeks, every student was able to work up the hierarchy several times without experiencing any anxiety during the visualization time.

Group B, which exposed students to study skills techniques for reducing test anxiety, covered basic study skills and test-taking methods. Books used to gather the information such as Milliman and Pauk's How To Take Tests and Carman and Adams' Study Skills: A Student's Guide For Survival, were also recommended for student reference. Handouts in current use at the Learning Resource Center that were of related interest (such as "Important Words in Essay Questions"), as well as handouts specifically designed for group use (such as "Everything You Always Wanted To Know About Test Taking But Were Afraid To Ask") were distributed and discussed. There was also group activity, such as an introduction to and massed practice of the SQ3R method of reading. During several group sessions students participated in taking a few practice multiple choice tests, such as the "Test For Test-Wiseness" (9) among others. Besides this information on objective exams, students were also given tips on how to take essay exams, open book and oral exams. Although Group B concentrated primarily on study skills methods, one session was devoted to an introduction to brief relaxation techniques (2).

A deliberate attempt was made to minimize any possible overlap between the two treatment methods in an effort to make a more definitive test of one treatment compared to the other. To test for pre-test differences between groups an F test was employed.

The non-significance of the F ratio led to the conclusion that there was homogeneity of variance. Therefore, both groups were considered to be samples of the same population.

RESULTS

To test the hypothesis that systematic desensitization would reduce anxiety more effectively than would study skills methods, group members were given pre-tests and post-tests on both the STABS and IPAT, and the differences between pre-tests and post-tests associated with each method compared to one another by use of a t test for independent groups. Differences between methods were adjudged significant for the STABS ($p < .05$) only.

In self-report data collected from the follow-up evaluations, student responses indicated that the groups were of help to them in relieving test-related anxiety. Approximately 80% of the students who received questionnaires returned them, and their responses were in favor of the treatment they had received. Members of both groups A and B claimed to be "a little more relaxed" while taking exams since completing the group. Students from Group B, which utilized study skills methods, generally tended to claim they did "a little better" on exams since completing the group. Group A however, which used systematic desensitization procedures, claimed they were currently doing "about the same as before the group".

Students in both groups were asked to evaluate the amount of anxiety they felt in specific test-taking situations since completing the group. They were asked to evaluate their anxiety in these situations in terms of none at all, a little, a fair amount, much or very much. For the most part, the contents of

the evaluation form were taken from Wisocki (21). With minor exceptions, this self-report data was consistent with the same questions asked immediately after completion of the groups. The results are to be found in Table 1.

All students in both groups who claimed to have physical problems that were anxiety related (such as stomach cramps, vomiting, etc.) claimed that the intensity of the physical problems lessened since completing the groups.

As a part of the questionnaire students were also asked to evaluate the helpfulness of methods and procedures used in their groups. They rated them according to helpful, a little helpful, fairly helpful, very helpful and extremely helpful. The results are to be found in Table 2.

Besides questions asking students to rate the amount of their anxiety, there were several open ended questions on the evaluation form. In both groups there were some major, though almost identical trends in answers. When asked how the group had helped them last semester, students from both groups tended to claim they felt more relaxed while taking their final examinations. Another important claim from students of both groups was that their attitude had changed. As one student wrote, "I don't feel as nervous now as I used to. I realize that after all, it's not life; it's just a test!"

When asked how the group had helped them so far this semester, those who had taken mid-terms by the time they received the questionnaire claimed they felt less anxious. Criticisms of the group were minor; a desire for longer sessions and a complaint regarding the room they met in were common to both groups.

TABLE I

		GROUP A						GROUP B					
		Not at All	A Little	Fair Amount	Much	Very Much		Not at All	A Little	Fair Amount	Much	Very Much
1.	Getting up in the morning the day of the exam.	0%	25%	75%	0%	0%	Before Group	7%	31%	23%	15%	23%
		25%	50%	25%	0%	0%	After Group	15%	38%	47%	0%	0%
2.	Thinking about the exam.	0%	25%	50%	0%	25%	Before Group	7%	23%	38%	15%	15%
		0%	50%	50%	0%	0%	After Group	7%	47%	38%	7%	0%
3.	Looking over the exam. *	0%	0%	25%	75%	0%	Before Group	0%	23%	38%	31%	7%
		0%	25%	50%	0%	0%	After Group	7%	47%	23%	15%	7%
4.	Seeing a question you're not sure of.	0%	0%	25%	0%	75%	Before Group	0%	7%	47%	31%	15%
		0%	25%	50%	25%	0%	After Group	7%	70%	23%	0%	0%
5.	Seeing a whole section of the exam you're not sure of.	0%	0%	0%	0%	100%	Before Group	0%	7%	31%	23%	38%
		0%	0%	50%	0%	50%	After Group	0%	15%	38%	31%	15%
6.	Thinking of the results of the exam afterwards.	0%	0%	75%	25%	0%	Before Group	0%	7%	31%	31%	31%
		0%	75%	25%	0%	0%	After Group	15%	15%	47%	23%	0%

* Total substantially less than 100 due to fewer responses

TABLE 2

GROUP A

	Not Helpful	A Little Helpful	Fairly Helpful	Very Helpful	Extremely Helpful
. Pre-testing anxiety measures	0%	50%	50%	0%	0%
. Deep muscle relaxation	25%	0%	0%	25%	50%
. Desensitization procedures	0%	0%	0%	100%	0%
. Group discussion	0%	50%	25%	25%	0%
. Post-testing anxiety measures	0%	50%	50%	0%	0%

GROUP B

	Not Helpful	A Little Helpful	Fairly Helpful	Very Helpful	Extremely Helpful
. Pre-testing anxiety measures*	7%	31%	38%	15%	0%
. SQ3R method of reading	0%	23%	31%	31%	15%
. Group handouts	0%	23%	47%	15%	15%
. "A Test for Test-Wiseness"	0%	31%	23%	31%	15%
. Tips on taking multiple choice tests	0%	7%	38%	38%	15%
. Tips on essay tests	0%	15%	23%	47%	15%
. Relaxation tape	7%	7%	31%	15%	38%
. Five minute relaxation technique	0%	7%	23%	31%	38%
. Tips on studying for open book exams	7%	23%	31%	38%	0%
. Post-testing anxiety measures	7%	15%	47%	31%	0%

* Total substantially less than 100 due to fewer responses

CONCLUSIONS AND RECOMMENDATIONS

The overall results, including those relating to both the statistical comparisons between groups and self-report data, demonstrate that the systematic desensitization procedure has advantages over other methods designed to help students reduce test-taking anxiety. We feel that this finding could be stated with greater certitude were the sample sizes of the two groups more equal. It is therefore recommended that for future studies of this nature random sampling procedures be utilized if possible to help control group size. In this light, it is suggested that future research also be carried out at an on-campus setting other than a student-oriented learning or counseling-type agency, where random selection procedures are not always appropriate.

Since it is our firm belief, based on the results of the study, that university level students benefit from different forms of test-anxiety reduction programs available to them, it is also recommended that research utilizing systematic desensitization, as well as other anxiety reduction methods, be continued in the future.

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